anteriore usque 2/3 apertum, margine crenulato, utrinque glabrum, 5,5 mm longum, 3 mm diam., lobis interioribus subquadratis, fimbriatis, utrinque glabris, 2,5 mm longis; ovarium exsertum, pedicellum reflexum; styli usque ad basim divisi, apice bilobato, incrassato. Capsula exserta, reflexa, ellipsoidea, trilobata, glabra, 4 mm longa, 4,5 mm lata. Semen ellipsoideum, 2,5-3 mm longum, 1 mm diam., superficie laevi, carunculus ignotus.

TYPE : *Malaisse 12015*, Zaïre, district du Haut-Katanga, Kasapa, alt. 1245 m, fleurs (holo-, BR).

DISTRIBUTION : ZAÏRE, district du Haut-Katanga, Kasapa [11°36'38" S, 27°28'47" E], alt. 1245 m, forêt claire à *Brachystegia utilis* Burtt Davy & Hutch., *B. boehmii* Taub. et *Julbernardia paniculata* (Benth.) Troupin, 10.III.1972, *Malaisse 7217* (K); *ibid.*, 18.XI.1972, *Malaisse 7419* (K); *ibid.*, 25.X.1972, *Malaisse 8288* (K); *ibid.*, 30.X.1981, *Malaisse 12015* (holotype); *ibid.*, 13.XII.1981, *Malaisse 12113* (BR, fruit, feuilles); Kiswishi [11°31' S, 27°28' E], alt. 1350 m, forêt claire à *Brachystegia boehmii* Taub., 3.XI.1981, *Malaisse 12017* (BR, jeune fruit); Luiswishi [11°29'05" S, 27°36'10" E], alt. 1208 m, forêt claire à *Julbernardia globiflora* (Benth.) Troupin et *Marquesia macroura* Gilg, 20.X.1982, *Malaisse 12423* (BR, jeune fruit, jeune feuille).

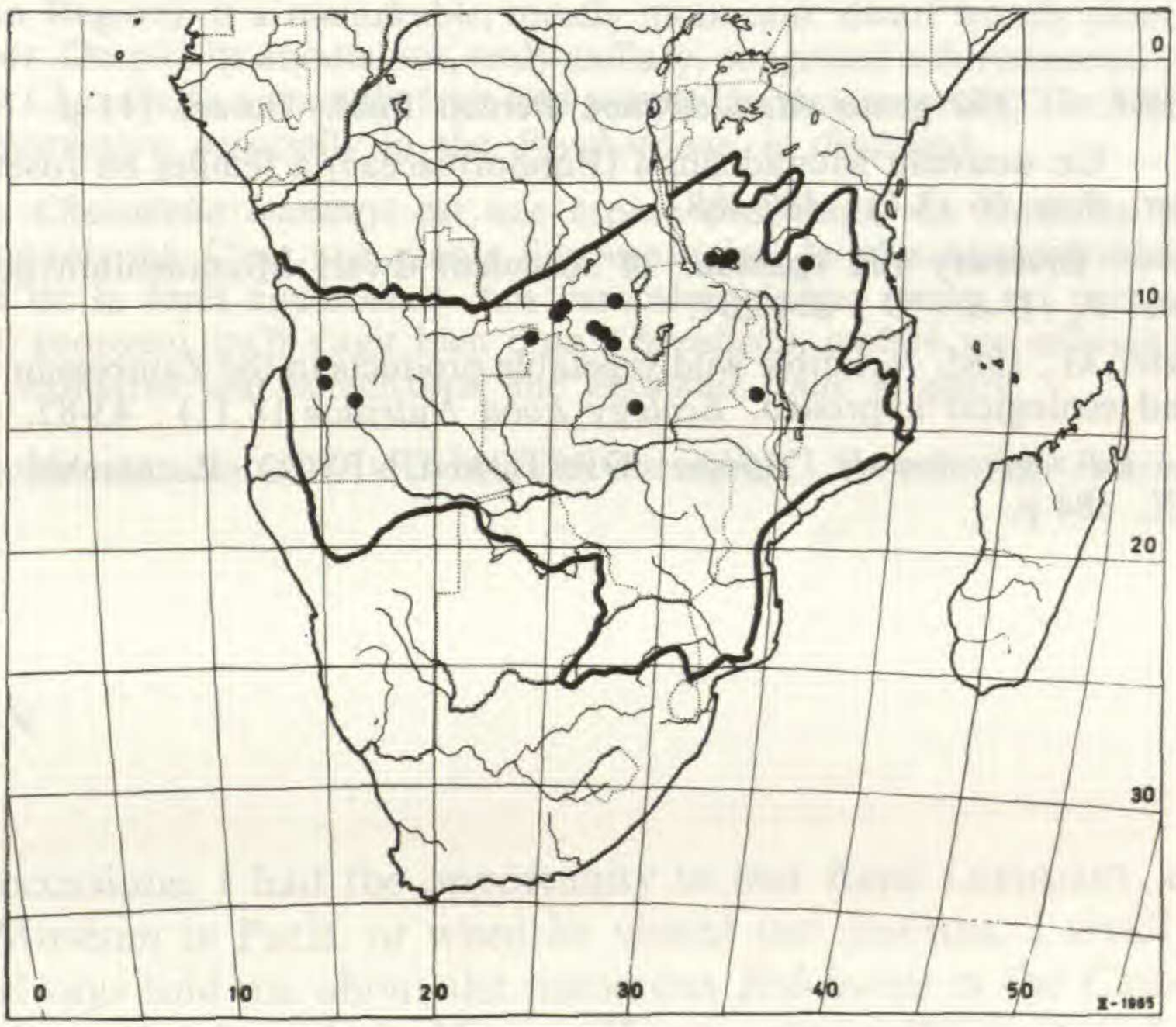

Fig. 2. — Limites de la région zambésienne et distribution des **Monadenium** géophytiques acaules à phénophases sexuée et chlorophyllienne dissociées dans le temps.

HABITAT : Forêts claires.

USAGE : La racine tubéreuse est comestible (MALAISSE & PARENT, 1985).

OBSERVATIONS : Les trois stations où cette espèce a été observée à ce jour sont situées dans les environs de Lubumbashi. Elles ont fait l'objet d'études écologiques détaillées ce qui explique la découverte de cette espèce discrète et rare dans ces stations. Les végétations qui s'y

observent relèvent des forêts claires zambésiennes de type miombo humide (WHITE, 1986), dont *M. letouzeyanum* apparaît comme une espèce caractéristique. On remarquera qu'au sein du genre *Monadenium* diverses espèces géophytiques, acaules, à phénophases dissociées dans le temps, se sont différenciées, à savoir : *M. angolense* Bally, *M. friesii* N. E. Br., *M. simplex* Pax, *M. pudibundum* Bally, *M. schaijesii* Malaisse, *M. orobanchoides* Bally. On peut encore y rattacher *M. kundelunguense* Malaisse à feuilles en rosette basale, mais dont la floraison coïncide avec l'étalement des feuilles et *M. clarae* Malaisse & Lecron à tige courte et phénophases dissociées. L'ensemble de leurs stations est situé dans les limites de l'aire de la région zambésienne (Fig. 2), pour laquelle ce type biologique est remarquablement adapté (BALLY, 1961 ; MALAISSE, 1986, 1987).

BIBLIOGRAPHIE

BALLY, P. R. O., 1961. — *The genus Monadenium*. Benteli Publ., Berne, 111 p.

MALAISSE, F., 1986. — Un nouveau Monadenium (Euphorbiaceae) à feuilles en rosette du Zaïre. *Bull. Jard. Bot. Nat. Belg.* 56 (3-4) : 487-488.

MALAISSE, F., 1987. — Diversity and splendor of succulent dwarf Monadenium geophytes in Zaire. *Cactus & Succ. J. (U.S.)* 59 : 204-207.

MALAISSE, F. & PARENT, G., 1985. — Edible wild vegetable products in the Zambezian woodland area : a nutritional and ecological approach. *Ecology Food Nutrition* 18 (1) : 43-82.

WHITE, F., 1986. — *La végétation de l'Afrique*. ORSTOM-UNESCO, Recherches sur les ressources naturelles, XX, 384 p.

Bull. Mus. natn. Hist. nat., Paris, 4e sér., **11**, 1989,
section B, *Adansonia*, nº 4 : 341-349.

A remarkable new *Chazaliella* (African *Psychotrieae*), exemplifying the taxonomic value of pyrene characters in the *Rubiaceae*

E. ROBBRECHT

Summary : *Chazaliella letouzeyi*, an endemic from the Lower Guinea Domain (Guineo-Congolian Region), is a remarkable, mostly monocaul, dwarf woody plant, inhabiting the rain forest floor. Despite its anomalous, truly axillary, congested inflorescences, it is a true member of the genus *Chazaliella*, as mainly fruit and pyrene characters testify. The high diagnostic value of pyrene characters, especially in the *Psychotrieae*, is discussed.

Résumé : *Chazaliella letouzeyi* est une espèce endémique du Domaine bas-guinéen (Région guinéo-congolaise). C'est une plante ligneuse naine, le plus souvent monocaule, de la strate inférieure de la forêt équatoriale. Les caractères de ses fruits, en particulier de ses noyaux (pyrènes), prouvent qu'il s'agit bien d'un *Chazaliella*, malgré ses inflorescences contractées et vraiment axillaires, qui constituent une anomalie dans le genre.

Elmar Robbrecht, Nationale Plantentuin van België, Domein van Bouchout, B-1860 Meise, Belgium.

INTRODUCTION

On several occasions, I had the opportunity to met René LETOUZEY, either when I was working in the Muséum in Paris, or when he visited our institute. I vividly remember these encounters. He always told me about the numerous *Rubiaceae* in the Cameroun rain forest, with a broad smile and a twinkle in his eye. He was especially impressed by the enormous diversity of the *Psychotrieae*. R. LETOUZEY used to send duplicates of his collections to family specialists, and he did so for the *Rubiaceae*, faithfully adressing, every year, an important parcel to BR, where initially E. PETIT and later I continued to examine his new finds. The *Rubiaceae* are so vast — in the south of Cameroun they are the largest angiosperm family — that many LETOUZEY collections belonging to it still remain unnamed.

One of the most striking *Rubiaceae* he repeatedly collected as from 1966, is described here. It is a mostly monocaul woody dwarf plant from the rain forest floor, remarkable by its large spatulate leaves crowded at the top of the branches. The copious raphides in all tissues and the typically valvate aestivation of the corollas indicate that it belongs to the subfamily *Rubioideae*. Several characters, notably the bi-locular ovaries with a single erect ovule in each chamber, drupaceous fruits, corneous endosperm and small embryos with inferior radicle,

point immediately to the tribe *Psychotrieae*. In this tribe, however, the truly axillary inflorescences, paired at the nodes, render it difficult to assign the species to a particular genus.

For a general account of the *Rubiaceae* and the classification, terminology and methods followed, see ROBBRECHT (1988).

THE GENERIC POSITION OF THE NEW SPECIES

LETOUZEY himself identified his material as *Schizocolea sp.*, which is quite understandable if one considers the very similar axillary, crowded inflorescences, flowers and general habit of that genus. *Schizocolea* is the only African genus of the otherwise neotropical *Coussareeae*, and it is not plausible to include the species described here in it, since *Schizocolea* has berry-like fruits with a very thin endocarp and a solitary seed with a profound, basal, raphal invagination.

Indeed, there is no doubt that the new species belongs to the *Psychotrieae*, according to the arguments already put forward in the introduction. However, the delimitation of the genera within the *Psychotrieae* is a notorious source of taxonomic difficulty. One of the solutions that has been proposed is to expand *Psychotria* into a massive genus of more than 1000 species (STEYERMARK, 1972). In that case, the new species described here would clearly belong to *Psychotria*.

For the African *Psychotrieae*, more narrow generic delimitations have been proposed. PETIT (1964) carried out an in-depth morphological comparison of African genera of the *Psychotrieae* and associated *Morindeae* and *Triainolepideae*. His work fitted in the framework of a revision of the species of *Psychotria* in Africa, and the problem of how to trace the limits of this genus. He observed a wide array of morphological variation in fruit and seeds, strongly contrasting with the uniformity of the flowers. For instance the pyrenes proved to be extremely variable in size, shape, occurrence of appendages etc. They are, moreover, often provided with germination slits, i.e. preformed [1] lines along which the radicle forces the hard pyrenes to open, allowing the embryo to emerge. PETIT found good correlations between the observed variation of PGSs (number, position, length...) and other characters. He concluded that PGS characters have a high diagnostic value, especially at the generic level, and summarized his observations in a key to the African genera of these three tribes (see appendix).

When comparing the characters of the new species with PETIT's criteria, it was found to match *Chazaliella* perfectly. The pyrenes with flat adaxial and frequently ribbed abaxial side and two lateral PGSs, and the seeds with delicate, pale seed-coat and marked raphal line (in other *spp.* often branched towards the top) render the genus very easy to recognize. The inflorescences of *Chazaliella* are variable, from loose and branched to very compact as in the new species. *Chazaliella* has heterostylous flowers which are characterized by a corolla-tube constricted at the throat, which is always densely hairy inside; pending good flowering material, only the last character is well documented in the new species. The position in *Chazaliella* is further corroborated by the colpate pollen, and rapid formation of cork on

1. Preformed germination slit(s) further abbreviated : PGS, plural PGSs.